

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 03-250661

(43)Date of publication of application : 08.11.1991

(51)Int.Cl.

H01L 27/095
H03F 3/343
H03K 19/0952

(21)Application number : 02-045451

(71)Applicant : HITACHI LTD
HITACHI TOBU SEMICONDUCTOR
LTD

(22)Date of filing : 28.02.1990

(72)Inventor : KAGAMI JUNICHIRO
CHIBA MAKOTO

(54) SEMICONDUCTOR INTEGRATED CIRCUIT DEVICE

(57)Abstract:

PURPOSE: To make working current of a plurality of constant current FETs uniform by adjusting gate width after gate length is made equal to compensate voltage drop due to distribution resistance in a lower potential side wiring for connecting a constant current supply circuit to the constant current FET of each logic circuit.

CONSTITUTION: Power supply voltage $-V_{EE}$ is supplied from a left external terminal and split into a plurality of branches to be extended toward the right. On the contrast, ground potential GND of a circuit is supplied from a right external terminal to be split into a plurality of branches to be extended toward the left. Respective circuit blocks are provided between the two current lines $-V_{EE}$ and GND. For example, a circuit block placed on the lowest array comprises a constant current supply circuit VBG and logic circuits LOG1 to LOG5 to which working current is fed by a constant current FET provided in a current mirror form. At this time the constant current FETs increase in size as they come off

from the constant current supply circuit VBG by increasing channel width in the sequence of constant current FETs Q2, Q3, Q4, Q5, Q6. Thus working current of LOG1 to LOG5 can be equalized.

